BatLab Basic Project Kit – Photo Resistor

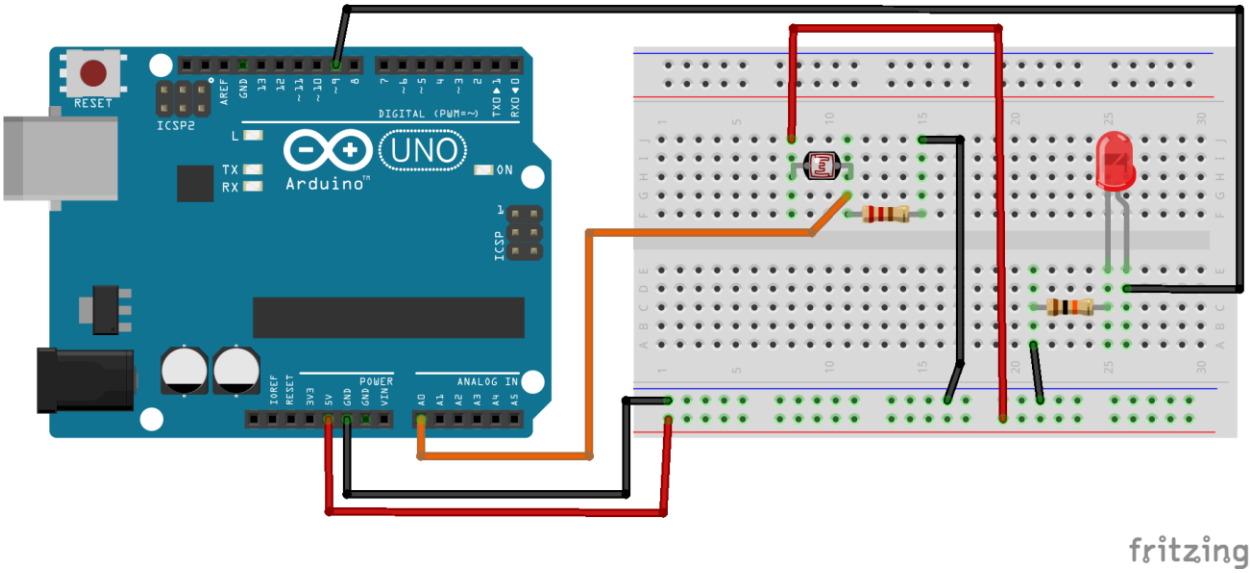
HOW IT WORKS

Photo resistors resist the flow of current based on how much light shines on the component.

PARTS

- Arduino Uno
- Photo Resistor
- LED
- 220Ω Resistor (marked with red band for convenience)
- 10kΩ Resistor (marked with silver band for convenience)
- Breadboard & jumper wires

CIRCUIT



```
/*
Photo Resistor
*/

const int sensorPin = 0;
const int ledPin = 9;

int lightLevel;

void setup()
{
  // We'll set up the LED pin to be an output.
  // (We don't need to do anything special to use the analog input.)

  pinMode(ledPin, OUTPUT);
}


void loop()
{
  lightLevel = analogRead(sensorPin); // Reads in a value from 0 to 1023
                                      // from the analog input

  // Although the analogRead() function reads a value between 0 and 1023,
  // the photoresistor will hover between reading of 200 and 700. We use
  // the map() function to transform this range to a number between 0 and
  // 255, which is a range that works well for this application.

  lightLevel = map(lightLevel, 200, 700, 0, 255);

  // It is possible for map to return a value outside of our desired
  // range. The constrain() function will make sure that the number is
  // within the range of 0 to 255.

  lightLevel = constrain(lightLevel, 0, 255);

  // Write the value to the LED! Cover the photoresistor with your finger
  // to turn on and off the LED.

  analogWrite(ledPin, lightLevel);
}
```